

REMARKS

By the present amendment, claims 1 and 17 have been amended to obviate the examiner's objections thereto and/or to further clarify the concepts of the present invention. Entry of these amendments is respectfully requested.

In the Office Action, the Supplemental Amendment of June 20, 2002, was objected to under 35 USC § 132 as containing new matter. Specifically, it was alleged that the original specification provided no support for the insertion of the reference to JIS K6253. In addition, claims 1-17 were rejected under the first paragraph of 35 USC § 112 as not being described in the specification as filed. Specifically, it was asserted that the specification did not describe how the hardness values are determined. In addition, the chart submitted with the last response which compared hardness values on various scales was questioned, it being asserted that the chart was incorrect since higher values generally are associated with higher hardness whereas the chart states the opposite. Reconsideration of the objection and the rejection in view of the attached Declaration and the following comments is respectfully requested.

According to the subject Office Action, the objection to the Supplemental Amendment of June 20, 2002, under 35 USC § 132 as containing new matter and the rejection under the first paragraph of 35 USC § 112 apparently could be overcome by submission of a Declaration of the inventors regarding the test actually utilized, it being

alleged that applicants had failed to establish that applicants utilized JIS K6253 in determining hardness values. In a telephone call to Examiner Sergent, it was confirmed that the objection and rejection could be obviated in this manner. Enclosed is a Declaration executed by the inventors which states that JIS K6253 was utilized by the applicants in determining hardness values. Accordingly, withdrawal of the objection under 35 USC § 132 and the rejection under the first paragraph of 35 U.S.C. § 112 is respectfully requested.

Claims 1 and 3 were rejected under 35 USC § 102(b) as being anticipated by the patent to Werner. In making this rejection, it was asserted that the patent teaches a polyurethane composition formed of the components as claimed. It further was asserted that the properties as recited in the claim were presumed to be inherently met by the composition as disclosed in the patent. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

Before discussing the rejection in detail, a brief review of the presently claimed invention may be quite instructive. The presently claimed invention relates to, in one aspect, a urethane composition for preparing a sheet transport roll for use in a copying machine, the composition comprising: (A) a specific polyether polyol blend; (B) a polyisocyanate; and (C) a chain lengthening agent, the urethane composition in a cured state having specific hardness, and a specific crosslinking density or a specific allophanate bond concentration. It is submitted that such a urethane composition for preparing a sheet

transport roll for use in a copying machine is not taught or suggested by the cited patent to Werner.

The Werner patent relates to a urethane composition for use as sidewalls of pneumatic tires. Therefore, the hardness described in the Werner patent only defines the hardness of the urethane composition in the case that the urethane composition is used as sidewalls of pneumatic tires. Among other things, there is no teaching or suggestion in the Werner patent about the use of the urethane composition as a sheet transport roll in a copying machine. In other words, there is no teaching or suggestion in the Werner patent about the hardness of the urethane composition in a cured state, a crosslinking density and an allophanate bond concentration of the urethane composition for preparing a sheet transport roll for use in a copying machine.

As noted above, the Werner patent relates to a urethane composition for use in tires, while the present invention relates to a urethane composition for preparing a sheet transport roll for use in a copying machine. Thus, the function and the use are completely different between the tires and the sheet transport roll. Therefore, even if the hardness of the urethane composition for use in tires is described in the Werner patent, one of ordinary skill in the art would not use the urethane composition taught for use in tires into an urethane composition for preparing a sheet transport roll for use in copying machines.

For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 102(b)

and allowance of claims 1 and 3 over the cited Werner patent are respectfully requested.

Claim 1 was been rejected under 35 USC § 102(b) as being anticipated by the '040 British patent. In making this rejection, like the rejection above, it was asserted that the patent teaches a polyurethane composition formed of the components as claimed. Again, the properties as recited in the claim were presumed to be inherently met by the composition as disclosed in the patent. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

The British patent relates to a urethane composition for use as gaskets and solid tires. Therefore, the hardness described in the British patent only defines the hardness of the urethane composition in the case that the urethane composition is used as gaskets and solid tires. Among other things, there is no teaching or suggestion in the British patent concerning the use of the disclosed urethane composition as a sheet transport roll in a copying machine. In other words, there is no teaching or suggestion in the British patent relative the hardness of the urethane composition in a cured state, a crosslinking density and an allophanate bond concentration of the urethane composition for preparing a sheet transport roll for use in a copying machine.

For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 102(b) and allowance of claim 1 over the cited British patent are respectfully requested.

Claims 2 and 4-17 were rejected under 35 USC § 103(a) as being unpatentable over the '192 Japanese patent publication in view of the '237 European patent publication and either of the above British patent or the Werner patent. In making this rejection, it was asserted that the Japanese patent publication teaches a sheet transporting roller made of polyurethane. Although it was acknowledged that the Japanese patent publication did not teach the composition of the polyurethane, it was asserted that it would be obvious to use the polyurethane as disclosed in either the British patent and the Werner patent. The European patent publication was cited for teaching the recited additives. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

The '192 Japanese patent publication relates to a polyurethane roller and describes that the hardness of the roller is JIS-A40°~70°. However, there is no teaching or suggestion in the Japanese patent publication concerning the hardness of the urethane composition in a cured state, a crosslinking density and an allophanate bond concentration of the urethane composition for preparing a sheet transport roll for use in a copying machine. In other words, even if only the hardness is defined, transport ability is deteriorated with a low friction coefficient and thus increased abrasion amount without the definition of a crosslinking density or an allophanate bond concentration. This can be clearly understood from the comparison between Examples and Comparative Examples in the subject specification.

It is further submitted in support of the patentability of the subject invention over the teachings of the cited patent publications is that these publications provide no suggestion to motivate one of ordinary skill in the art to combine their teachings in the manner proposed. Among other things, the utility of the compositions according to the cited patent publications is entirely different from that of the Japanese patent publication, that is, for use in gaskets and tires according to the British patent and use in the sidewalls of pneumatic tires in the Werner patent. It is a well established principle of U.S. patent practice that the prior art must contain some suggestion for combination since without such, any combination is pure speculation on the part of the examiner and is based on a prohibited hindsight reconstruction from applicants' own disclosure. Thus, it is submitted that given the diverse nature of the subject matter of the cited publications, there would be no suggestion for combination thereof.

For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 2 and 4 through 17 over the cited patent publications are respectfully requested.

In view of the foregoing, it is submitted that the subject application is now in condition for allowance and early notice to that effect is earnestly solicited.

In the event this paper is not timely filed, the undersigned hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit

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Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Marked Up Version of Amendments To Claims and Specification
Declaration

Marked Up Version of Amendments to Claims and Specification

IN THE CLAIMS:

Amend the claims as follows:

1. (Twice Amended) A urethane composition for preparing a sheet transport roll for use in a copying machine, the composition comprising: (A) a polyether polyol blend containing polytetramethyleneether glycol (PTMG) and polypropylene glycol (PPG) in a weight ratio of PTMG/PPG = 99/1 to 50/50; (B) a polyisocyanate; and (C) a chain lengthening agent, the urethane composition in a cured state having a hardness of not smaller than 40, and a crosslinking density of 0.15 to 0.8 mmol/cm³ or an allophanate bond concentration of 0.03 to 0.07 mmol/g.

17. (Twice Amended) A sheet transport roll for use in a copying machine comprising: a shaft; and a urethane layer provided on an outer periphery of the shaft, the urethane layer being composed of a urethane composition in a cured state prepared from: (A) a polyether polyol blend containing polytetramethyleneether glycol (PTMG) and polypropylene glycol (PPG) in a weight ratio of PTMG/PPG = 99/1 to 50/50; (B) a polyisocyanate; and (C) a chain lengthening agent; the urethane composition in a cured state having a hardness of not smaller than 40, and a crosslinking density of 0.15 to 0.8 mmol/cm³ or an allophanate bond concentration of 0.03 to 0.07 mmol/g.